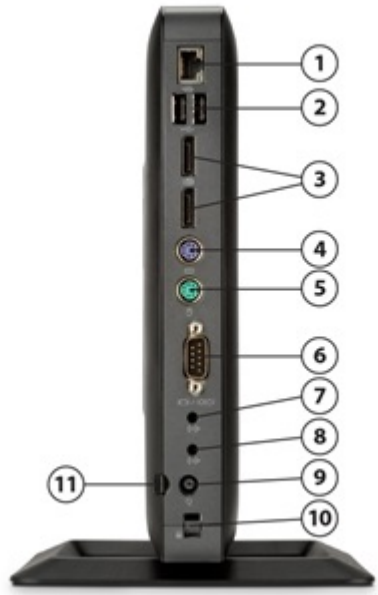
Overview

HP t620 Flexible Series Thin Client

FRONT

1. Power button (with integrated power indicator light)
2. Flash drive activity indicator light
3. USB 2.0 connectors (two)
4. USB 3.0 connectors (two)
5. Audio connector (mic/line in)
6. Audio connector (headphone/line out)
7. Mounting points for HP Quick Release or other VESA mount
8. Removable stand for horizontal orientation



BACK

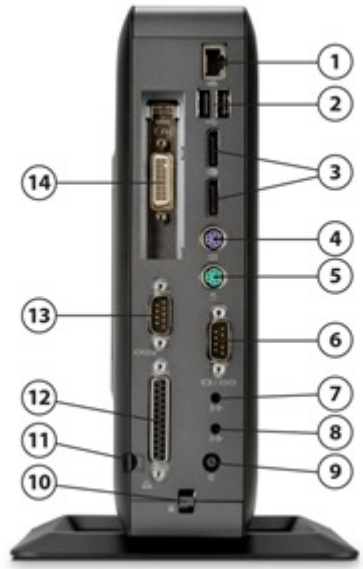
1. Ethernet RJ-45 connector
2. USB 2.0 connectors (2)
3. DisplayPort 1.2 ports (2)
4. PS/2 keyboard connector
5. PS/2 mouse connector
6. Option connector (may be configured as Serial, VGA, or fiber SC connector from factory)
7. Audio line in
8. Audio line out
9. +19V DC power input
10. Cable lock slot
11. Power cord retention clip

Overview

HP t620 PLUS Flexible Series Thin Client

FRONT

1. Power button (with integrated power indicator light)
2. Flash drive activity indicator light
3. USB 2.0 connectors (two)
4. USB 3.0 connectors (two)
5. Audio connector (mic/line in)
6. Audio connector (headphone/line out)
7. Mounting points for HP Quick Release or other VESA mount
8. Removable stand for horizontal orientation



BACK

1. Ethernet RJ-45 connector
2. USB 2.0 connectors (2)
3. DisplayPort 1.2 ports (2)
4. PS/2 keyboard connector
5. PS/2 mouse connector
6. Option connector (may be configured as Serial, VGA, or fiber SC connector from factory)
7. Audio line in
8. Audio line out
9. +19V DC power input
10. Cable lock slot
11. Power cord retention clip
12. Parallel connector
13. Serial connector
14. PCI Express (half-height) card slot (in quad-head video configurations - 2 x DVI-I ports

At A Glance

Hardware features:

- Two chassis: Standard (slim) and PLUS (expansion)
- Three CPU speed/core choices: AMD GX-420CA 2.0 GHz quad-core (in PLUS chassis) with AMD Radeon HD 8400E graphics; AMD GX-415GA 1.5 GHz quad-core with AMD Radeon HD 8330E graphics; or AMD GX-217GA 1.65 GHz dual-core with AMD Radeon HD 8280E graphics 64-bit accelerated Systems-on-Chip (SoC) for excellent processing and graphics performance
- AMD Radeon HD integrated graphics with hardware acceleration of streaming video formats and DirectX 11.1 support.

Overview

- DDR3L-1600 SODIMM (two slots) up to 16 GB supported
- New mSATA SSD (minimum 16GB) boot drive and M.2[6] SSD secondary drive options for enhanced performance, flexibility, and longevity[2]
- Active thermal management monitors component operating temperatures, throttles SoC operation if appropriate, and prevents unit thermal shutdown
- HP t620 PLUS factory-installed quad-head video option: Dual-head AMD FirePro 2270 video card which, when combined with on-board video ports, provides up to 4 digital video ports output.
- LAN - 10/100/1000 Gigabit Ethernet and optional HP 100 Mbps Mini-PCIe SC Fiber NIC (cannot be installed simultaneously with Wi-Fi module)[3]
- Wi-Fi options: Broadcom 802.11 a/b/g/n or Broadcom 802.11ac, both with dual internal antennas for superior performance and security[3]
- Dual digital DisplayPort 1.2 monitor support up to 2560 X 1600, optional VGA port factory configuration for legacy monitors
- USB ports: 2 x USB 3.0 and 2 USB 2.0 on front, 2 x USB 2.0 on rear, and 2 x USB 2.0 hidden inside chassis.
- Legacy ports standard: 1 x PS/2 keyboard and PS/2 mouse, and 1 x Serial or VGA (factory-configurable port)
- Legacy ports PLUS: 1 x PS/2 keyboard and PS/2 mouse, 2 x Serial, and 1 x Parallel
- Audio ports on front and rear
- Security features: TCG certified TPM chipset[1], BIOS designed to address NIST SP 800-147 guidelines, cable lock slot, and power cord retention clip to prevent accidental disconnects, Secure Port/Cable Cover & Case Intrusion Detection options; 2 internal USB 2.0 ports for securing USB Flash drives and dongles
- HP t620 PLUS expansion: Half-height PCI Express x4 (physically x16) expansion slot (not available with quad-head configuration)
- Multiple solid-state drive options
- Qualified 3rd-party Fiber NIC PCIe card options (Allied Telesis)
- HP 100 Mbps Mini PCIe SC Fiber NIC factory-installed option on either chassis
- Energy Star® 6.0 qualified4 and EPEAT® Gold registered[4] in the United States (except for some models with quad-head video or Fiber NIC networking options installed). See http://www.epeat.net for registration status in other countries.
- Post-consumer recycled plastics content greater than 25% total unit plastics (by weight)
- Low halogen[5]
- All models TAA Compliant (in North America)

NOTES:
[1]With 32-bit operating systems, memory above 3 GB may not all be available due to system resource requirements.
[2]For SSD's GB = 1 billion bytes. Actual formatted capacity is less.
[3]Wireless access point and internet access required. Availability of public wireless access points required.
[4]ENERGY STAR and EPEAT qualification planned but not yet obtained.
[5]This product is low halogen except for power cords, cables and peripherals, as well as the customer-configurable 100 Mbps Fiber NIC module which are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.
[6]M.2 Solid State Drives available Spring, 2014

Software features for HP t620 with HP ThinPro and HP Smart Zero Technology software:

- HP ThinPro and HP Smart Zero Technology are HP's purpose-built thin client operating systems built from Linux
- HP ThinPro offers an easy-to-use, easy-to-configure, locked-down interface -- HP Connection Manager -- that allows administrators to quickly create server connections for end users.
- HP Smart Zero Clients using Smart Zero Client Technology boot directly into a user log-in on the server or portal for which they are configured. No local thin client user interface means the end-user can get to work without special training on the access device. The Smart Zero Technology reduces the administrative burden by enabling the IT administrator to perform the configuration settings on the server and the settings will be automatically applied to HP thin clients plugged in to the network.
- ICA and RDP support for accessing Citrix and Windows resources
- VMware Horizon View PCoIP support for accessing VMware Horizon View sessions
- VDI broker support includes VMware Horizon View, Citrix XenDesktop (with CDA mode utility),

Overview

- Multimedia and USB redirection support
  - Citrix HDX MediaStream (multimedia redirection)
  - Citrix HDX Plug-n-Play (USB redirection)
- Improved quality of experience for end users using HP Velocity
  - Available only on HP thin clients
  - HP Velocity enables IT managers to monitor network activity and optimize end-user experience
  - HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for end users located off the LAN

Software features for Genuine Windows® Embedded Standard 7E (WES 7E):

- Microsoft® Windows® Embedded Standard 7 SP1 (WES 7E) with support for RemoteFX and local applications, providing a richer user experience
- Internet Explorer 9 (IE9) for genuine Internet Explorer browsing and Web-application interfaces
- Excellent rich multimedia experience and enhanced USB device support in VDI environments
- Latest protocol support from Citrix On-Line Plug in (ICA) 4.0, RDP 8 w/RemoteFX, and VMware Horizon View Mgr 5.4
- Enhanced Write Filter and File-Based Write Filter provide complete flexibility to protect the entire Flash disk, or configure areas of the disk for persistent access by local applications
- Microsoft Firewall for enhanced data security
- Support 802.1x LAN-based authentication for greater security
- HP Universal Print Driver provides instant access to a range of HP print devices without downloading separate
- Improved quality of experience for end users using HP Velocity
  - Available only on HP thin clients
  - HP Velocity enables IT managers to monitor network activity and optimize end-user experience
  - HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for end users located off the LAN

Software features for Genuine Windows® Embedded Standard 8 (WES8):

- The newest Microsoft embedded software based on Windows 8
- A 64-bit OS for improved performance and support for larger memory installations (up to 16 GB)
- Smooth, immersive experiences with technologies like advanced Multi Touch and Windows 8 applications
- The latest RDP8 and Remote FX client software
- WES8 offers a secure platform that is intelligent systems ready
- Latest Internet Explorer 10 (IE10) for genuine Internet Explorer browsing, HTML 5 support and Web-application interfaces
- Latest protocol support from Citrix Receiver Standard 4.0 with Storefront support, RDP 8 w/RemoteFX, and VMware Horizon View Mgr 5.3
- Excellent rich multimedia experience and enhanced USB device support in VDI environments
- Support for up to seven (7) Full HD digital monitor configurations available
- Integrated 802.11a/b/g/N with dual internal antennas configurations available
- Standard configurations: 16 GB Flash drive and 4 GB RAM
- Improved quality of experience for end users using HP Velocity
  - Available only on HP thin clients
  - HP Velocity enables IT managers to monitor network activity and optimize end-user experience
  - HP Velocity intelligently reduces network packet loss and retransmissions providing a better experience for the end user

All Windows Embedded 8 devices must be activated. Customers have the option via Internet connection, telephone, or indirectly through a proxy for large deployments.

Warranty:
HP Total Care Warranty and Services: limited three-year hardware warranty in most regions. HP Care Pack Services extend service contracts beyond your standard warranties. For more details visit: http://www.hp.com/go/lookuptool.

Overview

OPERATING SYSTEMS

HP t620 Flexible Series Thin Client models are pre-configured with one of the following operating systems.

HP ThinPro (32-bit)
HP Smart Zero Technology (32-bit)
Genuine Windows® Embedded Standard 7E (WES 7E) (32-bit)
Windows Embedded Standard 7P (WES 7P) (64-bit)*Windows® Embedded Standard 8 (WES 8) (64-bit)*
* WES 7P and WES8 are planned to be available for the HP t620 in Spring 2014. Varies by region.

PROCESSOR / CHIPSET

Standard Chassis
AMD Dual-Core GX-217GA 64-bit SOC (1.65 GHz, 1 MB L2 cache) with AMD Radeon HD 8280E (450MHz GPU) Graphics
AMD Quad-Core GX-415GA 64-bit SOC (1.5 GHz, 2 MB L2 Cache) with AMD Radeon HD 8330E (500MHz GPU) Graphics

PLUS Chassis
AMD Quad-Core GX-420CA 64-bit SOC (2.0 GHz, 2 MB L2 Cache) with AMD Radeon HD 8400E (600MHz GPU) Graphics

MEMORY

	ThinPro	HP Smart Zero Technology	WES 7E	WES 7P	WES 8
Flash (boot drive) SSD	16 GB	16 GB	16 GB	16 GB	16 GB
Standard system memory	4 GB	4 GB	4 GB	4 GB	4 GB
System memory reserved for graphics (minimum)			512 MB		
Maximum system memory (memory speed is 1600 MHz)	16 GB DDR3L 1600 MHz (8 GB x 2)	16 GB DDR3L 1600 MHz (8 GB x 2)	4 GB DDR3L 1600 MHz (4 GB x 1)	16 GB DDR3L 1600 MHz (8 GB x 2)	16 GB DDR3L 1600 MHz (8 GB x 2)
Memory slots			2 SODIMMs		

STORAGE

Primary Boot drive	16 GB MLC mSATA SSD (32 GB and 64 GB also available)
Secondary drive options	16, 32, and 64 GB MLC M.2[1] SSD

[1]M.2 Solid State Drives available Spring, 2014

Technical Specifications

GRAPHICS

AMD Radeon HD 8280E/8330E/8400E graphics

Mode	Color depth	Refresh rate (Hz)
800 x 600	8/16/32 bit	60, 75, 85
1024 x 600	8/16/32 bit	60, 75, 85
1024 x 768	8/16/32 bit	60, 70, 75, 85
1152 x 864	8/16/32 bit	60, 75, 85
1280 x 720	8/16/32 bit	60, 75, 85
1280 x 768	8/16/32 bit	60, 75, 85
1280 x 800	8/16/32 bit	60
1280 x 960	8/16/32 bit	60, 75, 85
1280 x 1024	8/16/32 bit	60, 75, 85
1366 x 768	8/16/32 bit	60
1400 x 1050	8/16/32 bit	60, 75, 85
1440 x 900	8/16/32 bit	60, 75, 85
1600 x 900	8/16/32 bit	60
1600 x 1200	8/16/32 bit	60, 75 ,85
1680 x 1050	8/16/32 bit	60
1920 x 1080	8/16/32 bit	60, 75, 85
1920 x 1200	8/16/32 bit	60, 75
2048 x 1536 (DisplayPort, only)	8/16/32 bit	60
2560 x 1600 (DisplayPort, only)	8/16/32 bit	60

NOTE: This table represents a sample of possible modes that this controller is capable of displaying but various factors such as the capability and EDID information returned by the attached monitor, the interface used (DVI-I/DisplayPort or optional D-SUB with dongle), and dual monitor mode may limit the availability of modes, color depth, and/or refresh rate..

QUAD-HEAD DIGITAL MONITOR CONFIGURATION

With AMD FirePro™ 2270 Multi-View Professional Graphics dual-head graphics card[1]

Up to two monitor ports on the dual-head card work in addition to the two monitor ports on the motherboard to provide quad-head capabilities at a bargain price. Optional output dongles can provide dual DisplayPort outputs from the graphics card if desired. With the DisplayPort adapter on the graphics card and on the motherboard, up to four 2560x1600 displays can be connected simultaneously.

- Factory Installed Option
- Requires PLUS chassis and occupies PCIe slot
- 512MB memory
- PCIe 2.1, x1
- DMS-59 (ships with dual DVI-I dongle)
- Maximum resolution as shipped
  - DisplayPort: 2 x 2560x1600 (on motherboard)
  - DVI: 2 x 1920x1200 (from graphics card)
- Maximum resolution with optional DMS-59 to DisplayPort adapter:
  - 4 x DisplayPort: 2560x1600 (2 on motherboard & 2 from graphics card)
- OpenGL 4.1

[1]If you attach the primary display to the AMD 2270 video card, the BIOS post information will not be displayed to the monitor at system startup. The display will turn on when the operating system starts. To view BIOS post information, attach the primary display to DP connectors on the rear panel.

INPUT/OUTPUT (peripheral support)

Keyboard	USB or PS/2 (varies by region)
Mouse	USB or PS/2 (varies by region)
Printer	Local and/or network printers (RDP, ICA, LPD)
Video	AMD Radeon HD 8280E graphics available on dual-core 1.65 GHz processor only. AMD Radeon HD 8330E graphics available on quad-core 1.5 GHz processor only. AMD Radeon HD 8400E graphics available on quad-core 2.0 GHz processor in PLUS chassis, only. Either 2 x DisplayPort 1.2 from factory, or 1 x DisplayPort 1.2 (active) and 1 x VGA (in option port) Quad-head video option: AMD FirePro™ 2270 Multi-View Professional Graphics dual-head graphics card (for up to four total digital monitors output) available as factory-installed option in PLUS models only (4 GB RAM required for quad-head WES 7 configurations): Up to 2 x 1920x1200 + 2 x 2560x1600, or with optional DMS-59 to DisplayPort adapter 4 x 2560x1600

AUDIO/VIDEO

Output	Internal amplified speaker 1/8-inch stereo mini jack (headphones, on front panel) 1/8-inch stereo mini jack (line out, on rear panel) Full 24-bit stereo up to 192-kHz sample rate.
Input	1/8-inch mini jack microphone (on front panel) 1/8-inch stereo mini jack (line in, on rear panel) 24-bit stereo, up to 192 kHz sample rate
Audio CODECS with hardware acceleration support	MP3 AAC stereo & HE AAC WMA stereo
Video CODECS with hardware acceleration support	MPEG-4 part 2 (DivX, Xvid) MPEG-4 part 10 (H.264, AVC) WMV 7/8/9/ VC-1 & ASF Demuxer

HARDWARE SECURITY

Security lock slot (cable lock sold separately)
Built-in power cord retention clip

Technical Specifications

NETWORKING

Hardware networking

10/100/1000 Gigabit Ethernet (RJ-45)
Wake on LAN (WOL)
PXE
TCP/IP with DNS and DHCP

Software networking

	ThinPro	HP Smart Zero Technology	WES 7E
Point-to-Point Protocol (PPP)			X
Point-to-Point over Ethernet (PPPoE)			X
Direct Connection through RS-232	X	X	X
Point-to-Point Tunneling Protocol (PPTP)	X	X	X
Layer-2 Tunneling Protocol (L2TP)	X	X	X
Server Network Time Protocol (SNTP)	X	X	X

WIRELESS LAN (select models)

Adapter	Broadcom 802.11a/b/g/n Wi-Fi Adapter; Broadcom 802.11ac
Form Factor	PCI-Express Half Mini Card with dual, internal antennas
Security	Supports 64- and 128-bit WEP, WPA, WPA2, AES, TKIP HP ThinPro and HP Smart Zero Technology: 802.1x authentication types: EAP-TLS, EAP-TTLS, EAP-PEAP, LEAP WES 7E: 802.1x authentication types: EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-FAST, LEAP

HP Fast Ethernet Mini PCIe SC Fiber Network Interface Card (factory-installed option)

Adapter	Allied Telesis AT-27MINI Fast Ethernet Fiber PCI Express MINI Network Interface Card
Available in	HP t620 standard and PLUS chassis configurations
Form Factor	Custom-designed card plugs into PCI-Express Mini Card slot, and mounts into device bay inside HP t620 chassis
Management Features	WMI, ACPI 2.0/w01, PXE 2.1 boot ROM, SNMP
Ethernet	IEEE 802.1p (Quality of Service) IEEE 802.2 (LLC) IEEE 802.3ac (MAC) IEEE 802.3u (100Mbps) IEEE 802.1as (Audio Bridging) P802.1Qav P802.1Qat (SRP) 1588-2000 (PTP)
Network Controller	Broadcom BCM57762

Technical Specifications

Connectors	SC
Optical Specifications	Output Optical Power -20 (min) -17 (typ) -14 (max) dBm Optical Sensitivity -34 (typ) -32 (max) dBm
Maximum Cabling Distance	Full-duplex Up to 2000 m (5,560 ft) Haf-duplex Up to 412 m (1,351 ft)
Status Indicators	LED 1 port On 100Mbps link up Blink Activity Off 100Mbps link down
Power consumption	2 Watts (typ)
Compliance	RoHS, UL, FCC/EN55022 Class A, TUV, EN55024, CE, C-TICK, VCCI
Supported by thin client operating systems	HP Smart Zero Technology and HP ThinPro Microsoft WES 7E

I/O PORTS, SLOTS & CONNECTORS

HP t620 (standard chassis)

4 USB 2.0 ports (two in front, two in rear)
2 USB 3.0 ports (in front)
2 USB 2.0 ports (hidden inside lockable chassis)
2 DisplayPort 1.2 (rear)
2 PS/2 (1, KB, 1 mouse)(rear)
1 serial (rear) or 1 VGA (rear, option) or 1 Fiber SC (rear, option provided with Fiber NIC option)
1 RJ-45(rear)
1 Headphone (front)
1 Microphone (front)
1 Audio line in (rear)
1 Audio line out (rear)

HP t620 PLUS (expansion chassis)

4 USB 2.0 ports (two in front, two in rear)
2 USB 3.0 ports (in front)
2 USB 2.0 ports (hidden inside lockable chassis)
2 DisplayPort 1.2 (rear)
2 PS/2(1, KB, 1 mouse)(rear)
2 serial (rear) or 1 serial and 1 VGA (option) or 1 Fiber SC (option provided with Fiber NIC option)
1 parallel (rear)
1 RJ-45 (rear)
1 Headphone (front)
1 Microphone (front)
1 Audio line in (rear)
1 Audio line out (rear)
1 Riser Card/Expansion Slot (PCIe 2nd Gen, x16 slot with x4 channels) (rear)

SERVER OS COMPATIBILITY/SUPPORT

Citrix XenApp 5 and later
Citrix XenDesktop 3 and later
Citrix Presentation Server 4.0 and later
Windows Server 2003
Windows Server 2008r2 Terminal Services (WES only)
Windows 2012 Server Remote Desktop services
VMware Horizon View Virtual Desktop Infrastructure

SOFTWARE for HP t620 and HP t620 PLUS

Host Environment	Protocol	Smart Zero	ThinPro	WES 7E

Technical Specifications

Microsoft Remote Desktop Services	RemoteFX (RFX)	✓	✓	✓
	RDP	✓	✓	✓
Citrix	ICA	✓	✓	✓
	HDX	✓	✓	✓
VMware Horizon View	RDP	✓	✓	✓
		✓	✓	✓
Protocol Clients		**Smart Zero**	**ThinPro**	**WES 7E**
Citrix Receiver*		12.1.5	12.1.5	4.0
Microsoft Remote Desktop Client				8
VMware Horizon View Client*		2.1	2.1	5.4
Remote Graphics Software (RGS)			via add-on	6.0
HP TeemTalk Terminal Emulator			7.3.3	7.3
Free RDP		1.0	1.0	
Browser Support		**Smart Zero**	**ThinPro**	**WES 7E**
Mozilla Firefox		19	19	
Internet Explorer				9
Security		**Smart Zero**	**ThinPro**	**WES 7E**
Smart Card		✓	✓	✓
logon Manager				✓
Read Only Operating System				✓
802.1x		✓	✓	✓
Enhanced Write Filter (EWF)				EWF
File-Based Write Filter (FBWF)				FBWF
Microsoft Firewall				✓
Microsoft AntiMalware & Windows Defender				
Session brokers		**Smart Zero**	**ThinPro**	**WES 7E**
Citrix XenDesktop		✓	✓	✓
VMware Horizon View		1.7	2.1	5.4
Leostream Desktop Connection broker (available from vendor website)				from vendor site
Management Tools		**Smart Zero**	**ThinPro**	**WES 7E**
HP Device Manager		✓	✓	✓
HP ThinState			✓	✓
HP Easy Tools			✓	✓
HP Smart Zero Client Services		✓		
Microsoft SCCM/EDM agent				✓
Additional Components		**Smart Zero**	**ThinPro**	**WES 7E**
HP Velocity		✓	✓	✓
HP Connection Manager/ HP Cloud Connection Manager			✓	✓
HP Universal Print Driver				✓
Windows Media Player				12
Windows Touch (Multi-touch support)				
Multilanguage support				
Microsoft DirectAccess				
Microsoft BranchCache				

Technical Specifications

Microsoft AppLocker			
Microsoft Sideloading			
Audio CODECs included	**Smart Zero**	**ThinPro**	**WES 7E**
MP3	✓	✓	✓
WMA stereo	✓	✓	✓
AAC stereo & HE AAC	✓	✓	
Microsoft AC3 encoder			✓
Video CODECs included	**Smart Zero**	**ThinPro**	**WES 7E**
MPEG-1	✓	✓	
MPEG-4 part 2 (DivX, Xvid, H.263)	✓	✓	✓
MPEG-4 part 10 (H.264, AVC)	✓	✓	✓
WMV 7/8/9/ VC-1 & ASF Demuxer	✓	✓	✓

NOTE: Other add-on software available (see: www.hp.com/support for latest list of available add-ons). Software performance and support may vary depending on customer environment and backend.

TEXT AND GRAPHICS TERMINAL EMULATIONS *(provided by HP TeemTalk 7 in HP ThinPro, WES 7, and operating systems)*

Emulation	Terminal ID
ADDS A2	
AIXTerm	
ANSI BBS	
AT 386	
ATT4410	
HP 700-92/96	70092, 70094, 70096, 2392A, 2622A
HZ1500	
IBM3151	Mod11, Mod31
IBM3270	3278-2 (24x80), 3278-3 (32x80), 3278-4 (43x80), 3278-5 (27x132), 3278-2-E (24x80), 3278-3-E (32x80), 3278-4-E (43x80), 3278-5-E (27x132), 3279-2 (24x80), 3279-3 (32x80), 3279-4 (43x80), 3279-5 (27x132), 3287-1
IBM5250	5291-1, 5292-2, 5251-11, 3179-2, 3196-A1, 3180-2, 3477-FC (27x132), 3477-FG (24x80), 3486-BA, 3487-HA, 3487-HC, 3812-1
SCO Console	
Stratus V102	
TA6530	
TVI910	
TVI920	
TVI925	
TVI950	
TVI955	
VT52, VT100, VT100+, VT500 (7- or 8-bit)	VT100, VT101, VT102, VT125, VT131, VT132, M2200, VT220, VT240, VT320, VT340, VT420, VT510, VT520, VT525
VT HP220, VT UTF8	VT100, VT101, VT102, VT125, VT220, VT240, VT320, VT340, VT420, VT131, VT132, M2200, VT510, VT520, VT525

Technical Specifications

VT PCTerm
Wyse PCTerm
WY50
WY50+
WY60

NOTE: Wireless features, performance and support may vary depending on environmental variables such placement, settings and firmware of your access points. Please contact your wireless vendor for support of your wireless environment.

LANGUAGES (Local User Interface)

The following local user interface languages are available for Windows Embedded Standard 7:

English, French, German, Spanish, Dutch, Norwegian, Korean, Simplified Chinese, Traditional Chinese, Japanese, Russian, and Arabic

The following local user interface languages are available for HP ThinPro and HP Smart Zero Technology:

English, French, German, Spanish, Korean, Simplified Chinese, Traditional Chinese, and Japanese

DIMENSIONS (WxDxH)

	HP t620 (standard chassis - vertical orientation)	HP t620 PLUS (expansion chassis - vertical orientation)
With stand	8.7 x 1.6 x 9.5 in 22 x 4 x 24 cm	8.7 x 2.6 x 9.5 in 22 x 6.5 x 24 cm

NOTE: Dimensions are approximate

WEIGHT

	HP t620 (standard chassis)	HP t620 (standard chassis)
With stand	3.0 lb 1.36 kg	4.5 lb 2.04 kg

NOTE: Weights are approximate. Optional add-ins or customer add-ins will increase these weights.

POWER SUPPLY

HP t620 (standard chassis)

65W
Worldwide auto-sensing 100-240 VAC, 50-60 Hz
Energy-saving automatic power-down
Surge-tolerant

HP t620 PLUS (expansion chassis)

85 W
Worldwide auto-sensing 100-240 VAC, 50-60 Hz
Energy-saving automatic power-down
Surge-tolerant

Technical Specifications

ENVIRONMENTAL

Operating temperature range	Standard 50° to 104° F (10° to 40° C Using Quick Release with a flat panel monitor 50° to 95° F (10° to 35° C) Using PCIe Expansion Card 50° to 104° F (10° to 40° C) **Standard chassis with Fiber NIC**: 50° to 95° F (10° to 35° C)
Non-operating temperature range	-22° to 140° F (-30° to 60° C)
Humidity	Condensing 20% to 80% Non-condensing 10% to 90% non-condensing

NOTE: Specifications are at sea level with altitude derating of 1° C/300m (1.8° F/1000ft) to a maximum of 3 Km (10,000 ft), with no direct, sustained sunlight. Upper limit may be limited by the type and number of options installed.

REGULATORY COMPLIANCE

Ergonomics	Approved
Safety	UL 1950, CSA 950; TÜV-GS (EN60 950); approved
RF Interference	FCC Class B; CE Mark; EN55022B; VCCI

HP t620 Thin Client

Environmental Data

Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US ENERGY STAR®
- IT ECO Declaration
- EPEAT <Gold> registered in the United States. See http://www.epeat.net for registration status in your country.

Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	9.64 W	9.63 W	9.71 W
Normal Operation (Long idle)	8.98 W	8.99 W	8.98 W
Sleep	3.25 W	3.22 W	3.22 W
Off	2.49 W	2.42 W	2.49 W

Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	33 BTU/hr	33 BTU/hr	33 BTU/hr
Normal Operation (Long idle)	31 BTU/hr	31 BTU/hr	31 BTU/hr
Sleep	11 BTU/hr	11 BTU/hr	11 BTU/hr
Off	9 BTU/hr	8 BTU/hr	9 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive -2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 14.5% post-consumer recycled plastic (by wt.)
- This product is 94.4% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
  - PAPER/Corrugated 118.8 g

- Internal:
  - PLASTIC/Polyethylene low density 19.2 g
  - PLASTIC/EPE-Expanded Polyethylene 62.7 g

HP t620 Plus Thin Client

Environmental Data

Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US ENERGY STAR®
- IT ECO Declaration
- EPEAT <Gold> registered in the United States. See http://www.epeat.net for registration status in your country.

Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	15.34 W	14.85 W	15.31 W
Normal Operation (Long idle)	15.04 W	14.54 W	14.98 W
Sleep	3.17 W	3.14 W	3.15 W
Off	2.74 W	2.66 W	2.72 W

Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	52 BTU/hr	51 BTU/hr	52 BTU/hr
Normal Operation (Long idle)	51 BTU/hr	50 BTU/hr	51 BTU/hr
Sleep	11 BTU/hr	11 BTU/hr	11 BTU/hr
Off	9 BTU/hr	9 BTU/hr	9 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive -2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 17.3% post-consumer recycled plastic (by wt.)
- This product is 95.6% recycle-able when properly disposed of at end of life.

Packaging Materials

Environmental Data

- External:
  - PAPER/Corrugated 118.8 g
- Internal:
  - PLASTIC/Polyethylene low density 19.2 g
  - PLASTIC/EPE-Expanded Polyethylene 48.3 g

HP t620 Thin Client and HP t620 Plus Thin Client

RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at: http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants - may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel - finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) - except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging

materials.

- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Hewlett-Packard Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Eco-label certifications
http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html
ISO 14001 certificates:
http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html

Options and Accessories (sold separately)

		Part #
Accessories	HP Quick Release Kit	EM870AA
	HP Integrated Work Center Stand	LH526AA
	HP t620 Standard Lockable Rear Port Control Security Cover	F4N53AA
	HP t620 PLUS Lockable Rear Port Control Security Cover	F4N54AA
Memory Upgrade	HP 4 GB DDR3L-1600 SODIMM Kit	B4U39AA/B4U39AT
	HP 8 GB DDR3L-1600 SODIMM Kit	B4U40AA / B4U40AT
Communications[2, 3]	Allied Telesis PCIe x1 Fast Ethernet Fiber Network Interface Card[1]	AT-2711FX
	Allied Telesis PCIe x1 Gigabit Fiber Network Interface Card[1]	AT-2972SX
	Belkin USB-to-Serial Adapter[1]	EM449AA
Input Devices	HP PS/2 Standard Keyboard	DT527A
	HP USB Standard Keyboard	DT528A
	HP USB CCID Smartcard Keyboard	BV813AA
	HP PS/2 2-Button Optical Mouse	EY703AA
	HP USB 2-Button Optical Scroll Mouse	DC172B
Monitors[2]	HP L5009tm Touchscreen Monitor[7]	VK202AA
	HP EliteDisplay E221 21.5-In Monitor	C9V76AA
	HP L6015tm 15" Touchscreen Monitor[8] (5 touch Projective Capacitive)	A1X78AA
	HP L6017tm 17" Touchscreen Monitor[8] (5 touch Projective Capacitive)	A1X77AA
	LD 4220tm 42" LCD Interactive Touch Display, Digital Display[8]	XH216AA
	LD 4720tm 47" LCD Interactive Touch Display, Digital Display[8]	XH217AA
Graphics	HP DisplayPort to DVI-D Adapter	FH973AA FH973AT
	HP DMS-59 to dual VGA Adapter (for use with pre-configured quad-head models only)	GS567AA
	HP DMS-59 to dual DVI-I Adapter (for use with pre-configured quad-head models only)	DL139A
	HP DMS-59 to dual DisplayPort Adapter (for use with pre-configured quad-head models only))	XP688AA
Storage	HP 16GB MLC M.2 Solid State Drive[9]	F3V77AA
	HP 32GB MLC M.2 Solid State Drive[9]	F3V78AA
	HP 64GB MLC M.2 Solid State Drive[9]	F3V79AA
Security	HP USB CCID Smartcard Keyboard	BV813AA
	Gemalto PC USB-TR Card Reader[1]	HWP117685A

Options and Accessories (sold separately)

	Gemalto.NET v2+ Smart Card[1]	HWP115303B HWP115647C
	SCM SCR331 USB Smart Card Reader[1]	904054
	HP Keyed Cable Lock	BV411AA
	HP t620 Standard Chassis Rear Port Security Cover	F4N53AA
	HP t620 PLUS Chassis Rear Port Security Cover	F4N54AA
Care Pack Services4	9x5 Next-Business-Day Advanced Exchange - 3 Years	331653-001; U4847E[5]
	9x5 Next-Business-Day On-Site Coverage - 3 Years	331655-001; U4849E[5]
	Hardware Installation	331686-001; UJ865E

[1]Option, drivers, warranty, and support are available directly from third party.
[2]Drivers must be installed. For a complete list of monitors compatible with HP thin clients, it is important to cross-reference the supported video resolutions of the HP thin client to the supported resolutions of the monitor. Most HP monitors have one or more supported resolutions that match HP thin client products.
[3]Only serial is supported.
[4]Service levels and response times for HP Care Pack Services may vary depending on your geographic location. Restrictions and limitations apply. For details, visit: www.hp.com/go/carepack.
[5]U4847E is available in all regions; U4849E is available in Latin America and Asia-Pacific/Japan.
[6]Not supported with HP ThinPro or HP Smart Zero Technology HP t620 thin clients.
[7]Supported on HP t620 WES7P and WES 8 thin clients
[8]Multi-touch only supported on HP t620 WES7P and WES 8 thin clients
[9]M.2 Solid State Drives available Spring, 2014

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